



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,598	07/13/2004	Donald L. Rymer	AD6856USPCT	9545

7590

07/07/2005

Kevin S Dobson
E I du Pont de Nemours & Company
Legal Patents
Wilmington, DE 19898

EXAMINER

HUANG, MEI QI

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/501,598	Applicant(s) RYMER ET AL	
	Examiner Mei Q. Huang	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/501,491. The difference between the subject matter of present Claim 1 and Claim 21 of the copending application is extrusion temperature and PVB sheet's glass transition temperature, T_g . A comparison is shown in the following table.

Art Unit: 1713

	Copending Application	This Application
Extruding Temperature °C	225 - 245	175 - 225
T _g °C	35 - 60	> 32

As one can see, the copending ranges overlap the instantly claimed ones. It has been consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claim 14 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/501,491. The difference between the subject matter of present claim 14 and claim 1 of the copending application is the plasticizer usage. A comparison is shown in the following table.

	Copending Application	This Application
Plasticizer amount	< 30 pph	30 – 50 pph

As one can see, the copending ranges overlap the instantly claimed ones. It has been consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) or

Art Unit: 1713

Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claim 14 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/501,493. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed plasticized PVB composition is seen to have the same components as identified in the claim 1 of the copending application. The claim 1 of the copending application cites a small laminate article comprising a plasticized PVB resin. Given the overlap in scope, the instantly claimed invention is rendered *prima facie* obvious by the claim of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-5, 8, 14-19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutweiler (US Patent 5,573,842) in view of Dauvergne (FR Patent 2,401,941, Abstract), and further in view of Shohi et al. (EP-1036775 A1).

The prior art to Gutweiler relates to a plasticized PVB film comprising a plasticizer, PVB, and an optical brightener in an amount effective to improve the optical properties and reduce the yellowing of the film which is useful as intermediate film in multilayer laminated glass panes (Abstract). Gutweiler's PVB sheet with a yellowness index of less than 2 (column 8, lines 4-5) is made by blending PVB with 20-50 wt% of plasticizer (column 4, line 1) and extruding under temperature of 140-250° C (column 4, line 12). The PVB has a content of vinyl alcohol monomer units of preferably 17-29 wt% (column 3, lines 41-43). However, the Gutweiler's working examples disclosed at column 4 does not include a detail of PVB synthesis.

Dauvergne teaches a process for preparing PVB comprising adding PVA, acid catalyst, and an emulsifier (i.e. a surfactant) into a reactor with stirring, introducing butyraldehyde gradually, then, after adjusting pH to 9-11, separating the resultant PVB

Art Unit: 1713

from the mixture (Abstract). Dauvergne does not mention the wash step after PVB is separated from mixture as required by applicant's claim 1.

The prior art to Shohi et al. provides an interlayer film for laminated glass containing PVB resin (Abstract and page 3, [0016]). Shohi et al's teaching of PVB synthesis includes a step of reaction product wash with an excess of water in order to wash out the unreacted n-butyraldehyde and a neutralization of the hydrochloric acid catalyst with the common neutralizer (page 5, [0046]).

In light of the fact that Dauvergne teaches a detailed method of synthesizing PVB and Shohi et al. teach a similar PVB synthesizing process including a washing step, one having ordinary skill in the art at the time the invention was made would appreciate such teaching and, thus, to incorporate Dauvergne's method in Gutweiler's process of making a similar PVB laminate in combining with the method as taught by Shohi, because Dauvergne further detailed Gutweiler's method of synthesizing PVB and Shohi teaches the benefit of including one extra step of product washing and all three prior arts relate to the same subject matter, i.e. making a PVB laminated glass.

As to the glass transition temperature of the PVB sheet, as discussed above, given the substantially identity in the plasticized PVB composition between the prior art and the present invention, it is the examiner's position to believe that the prior art composition must inherently possess the same T_g . Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 195

Art Unit: 1713

USPQ 430 (CCPA 1977); *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596, (CCPA 1980).

In regard to claims 2-3, Gutweiler uses plasticizer in an amount of 20-50 wt% (column 4, line 1). Shohi et al. disclose that supplementing the interlayer PVB film for laminated glass with additives is a conventional practice. The additives include ultraviolet absorber, light stabilizer, oxidation inhibitor, surfactant, colorant, etc. (page 4, [0033]). The oxidation inhibitor includes phenolic antioxidants, see page 4, [0036].

In regard to claims 4-5, Gutweiler's extrusion temperature is in a range of 140-250° C (column 4, line 12), which covers the instantly claimed ranges of 205-220°C and 210-215° C.

As to claim 8, Gutweiler teaches use of brightener to reduce yellowness of the PVB film (column 2, lines 29-65), which is seen to render obvious the bleach compound as instantly claimed.

As to claim 14, the rejection made for Claim 1 described previously in this Office Action would be applied herein to reject Claim 14.

As to claims 15-17, Gutweiler's plasticizer, such as a di-ethylene glycol with aliphatic (C₆- C₁₀)-carboxylic acid, i.e. 3GO, can be seen at column 3, lines 59-60. The amount of plasticizer used is ranged from 20 to 50 wt% (column 4, line 1).

In regarding to claim 18, the rejection made for Claim 2 described previously in this Office Action would be applied herein to reject Claim 18.

In regarding to claim 19, the rejection made for Claims 9-10 described previously in this Office Action would be applied herein to reject Claim 19.

Art Unit: 1713

In regarding to claim 23, Gutweiler teaches that the PVB laminated glass is produced by a laboratory method using a high-speed press, in which the glass sheets are pressed with the intermediate laminated (PVB) films at 150° C (column 5, lines 26-28).

8. Claims 6-7, 9-13 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutweiler (US Patent 5,573,842) in view of Dauvergne (FR Patent 2,401,941), and further in view of Shohi et al. (EP-1036775 A1) as applied to claims 1-2, 8 and 14-15 and 19 above, and further in view of Degeilh (US 4,696,971).

The prior art references to Gutweiler, Dauvergne and Shohi et al. are adequately presented previously in this Office Action and are incorporated herein by reference. All the aforementioned prior art references do not teach use of a specific surfactant or emulsifier in making PVB.

Degeilh' 971 teaches a process for the preparation of a PVB including using sodium dioctyl sulfosuccinate (DOS), effective as an emulsifier (Abstract). DOS advantageously facilitates the after-treatment of the PVB to separate the product (column 3, lines 19-20). More benefits of using such DOS emulsifier are described at column 3, lines 20-52.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a surfactant, such as DOS, as taught by Degeilh, in Gutweiler's PVB formulation in order to take the advantage of such surfactant disclosed by Degeilh, and thus, to arrive at the instant claims 6-7.

Art Unit: 1713

As to claims 9-10, it is noticed that sodium dioctyl sulfosuccinate, i.e. DOSS, is used as an emulsifier by Degeilh in the process of making PVB film (Abstract), which reads on the instant claims 9-10. Even though Degeilh does not specify that DOSS can also be used as a bleach agent, such functionality must be inherently processed by this compound. Finding a new property of the compound and such a discovery does not constitute a new invention. The courts have held that the fact that a characteristic is a necessary feature or result of a prior-art embodiment is enough for inherent anticipation, event if that fact was unknown at the time of the prior invention. *In Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004);); and *In Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49 (Fed. Cir. 1999).

As to claims 11-13, Gutweiler's process of dissolving or suspending optical brighteners in the plasticizer, mixing the plasticizers and optical brighteners with PVB can be seen at column 2, lines 12-16, which meets the instantly claimed "wet process". Shohi et als' disclosure on page 5, [0047], meets the instantly claimed "dry process".

As to claim 20, the rejection made for Claim 7 described above in this Office Action would be applied herein to reject Claim 20.

As to claim 21, Shohi et al. disclose that supplementing the interlayer PVB film for laminated glass with additives is a conventional practice. The additives include ultraviolet absorber, light stabilizer, oxidation inhibitor, surfactant, colorant, etc. (page 4, [0033]). The oxidation inhibitor includes phenolic antioxidants, see page 4, [0036].

Art Unit: 1713

9. Claim 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutweiler (US Patent 5,573,842) in view of Dauvergne (FR Patent 2,401,941), in view of Shohi et al. (EP-1036775 A1), in view of Degeilh (US 4,696,971) as applied to claims 14 and 20 above, and further in view of an online product brochure from Great Lakes Chemical Corporation, www.pa.greatlakes.com, 3rd Edition, October 2001.

The prior art references to Gutweiler, Dauvergne, Shohi et al. and Degeilh are adequately presented previously in this Office Action and are incorporated herein by reference. The aforementioned prior art references do not teach the instantly claimed antioxidant compound, i.e. 2,2-methylenebis (6-t-butyl-4-methylphenol).

Shohi et al. disclose that an antioxidant, such as phenolic antioxidant, among other additives, is conventionally incorporated in an interlayer film for laminated glass of this kind (page 4, [0033] and [0036]), while the online product brochure from Great Lakes Chemical Co. provides a list of nineteen antioxidants under the phenolic antioxidants category including 2,2'-methylenebis (6-t-butyl-4-methylphenol), which meets the instantly claimed compound. Including a phenolic antioxidant is a common practice in the art as clearly stated by Shohi et al. and finding a specific product from a chemical company's product brochure is well within the reach of a skilled person in the art. Therefore, it would have been obvious to those skilled in the art to employ such antioxidant in Gutweiler's PVB composition, motivated by a reasonable expectation of successfully obtaining the corresponding interlayer film containing PVB for laminated glass.

Art Unit: 1713

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mei Q. Huang whose telephone number is (571) 272-3549. The examiner can normally be reached on 8am - 4pm, Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mei Q. Huang
Examiner

June 24, 2005



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700